USER GUIDE FOR CDF-12A PIPE WIND SPEED SENSNOR

This document is applied for the following products

SKU	CDF	HW Ver.	1.0	FW Ver.	1.0
Item Code	CDF-12A	Pipe Wind Speed Sensor, 4-20mA RS485 0-5V 0-10V Output, ABS, 0-30m/s, ±0.2%FS			

1. Introductions

CDF-12A Pipe Wind Speed Sensor is designed on the basis of the principle of pitot tube, the probe and housing adopt resistance to high temperature and anticorrosion materials . In the bad environment, it also can work stably and reliably.It can quickly and accurately tiny air flow meas urement. The product has realized high precision and high resolution through internal linear comp ensation and temperature calibration, and long term stability is extremely good, which should be in stalled directly.

2. Specification

Item	Specification
Output	4-20mA,0-10V,RS485,0-5V
Supply	12-24VDC
Range	0-5m/s,0-10m/s,0-20m/s,0-30m/s
Response time	<1s
Accuracy(0-50℃)	±0.2%FS
Resolution	<0.05m/s
Power consumption	<80mA@24VDC(4-20mA) <60mA@24VDC(RS485,0-5V,0-10V)
Long-term stability	±0.1m/s per year
Display	optional
Ingress Protection	IP55
Operating Temperature	-20℃-+70℃
Main material	ABS
Probe length	210mm typ., Other length can be customized
Storage Condition	10℃-60℃@20%-90%RH

3.Working Process

There is a heating element in the sensor, which is kept at a certain temperature by a constant current. When there is an air flow, the heat of the heating element is taken away by the air flow, and the temperature is reduced. To keep the temperature constant, the circuit automatically increases the current.
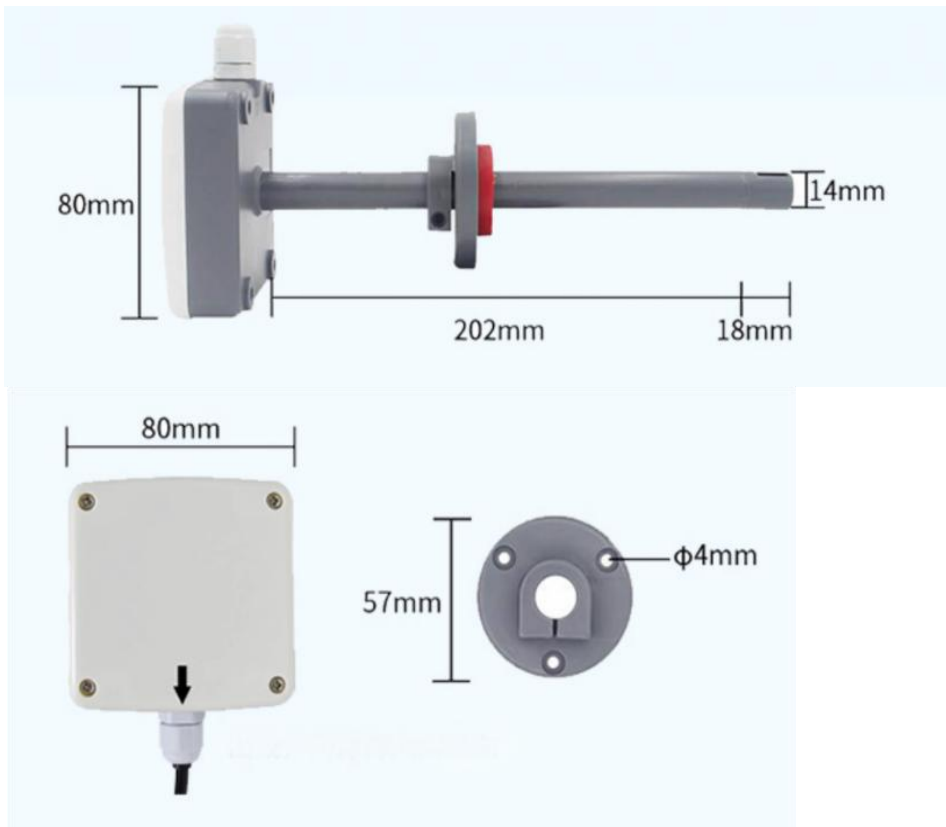
By measuring the change in current, the wind speed can be calculated. The greater the wind speed, the more heat it carries away, and the greater the current required.

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4. Electrical Connections

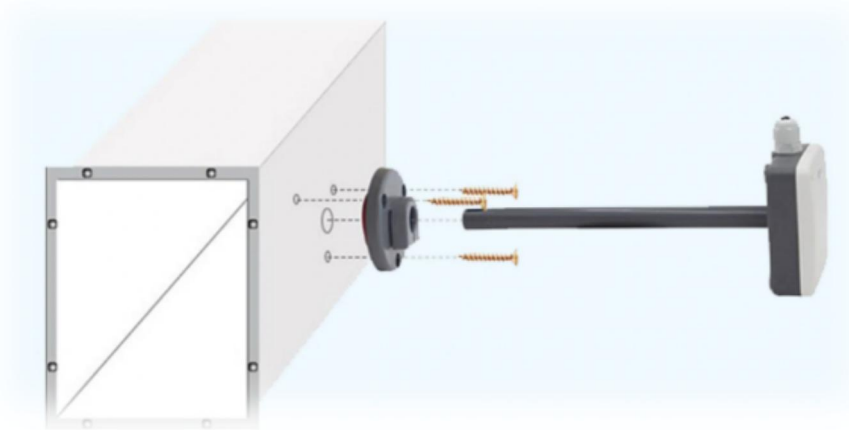| Cable	RS485	4-20mA
Red	V+	V+
Black	V-	V-
Yellow	RS485A	signal
Green	RS485B	/

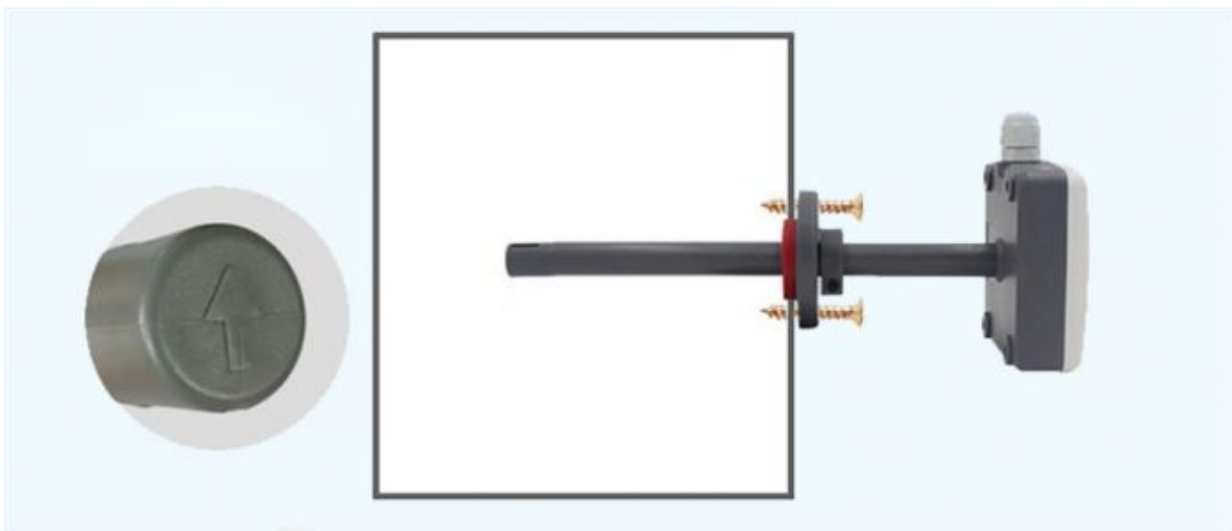# 5. Dimensions

6. Installation

**Step 1:** Open the box and take out the wind sensor.

Step 2: Select flange mounting and locate mounting holes on the mounting pipe.

Step 3: Fix the flange on the outside of the pipe with screws, and ensure that the **arrow direction** is consistent with the wind direction during installation.

Step 4: For circular pipes, the sensor should be installed in the straight section of the pipe. Generally speaking, the installation position should be at least three times the diameter of the pipe from the elbow, tee, valve and other pipe fittings to ensure that the measured wind speed is not interfered with the local flow field.
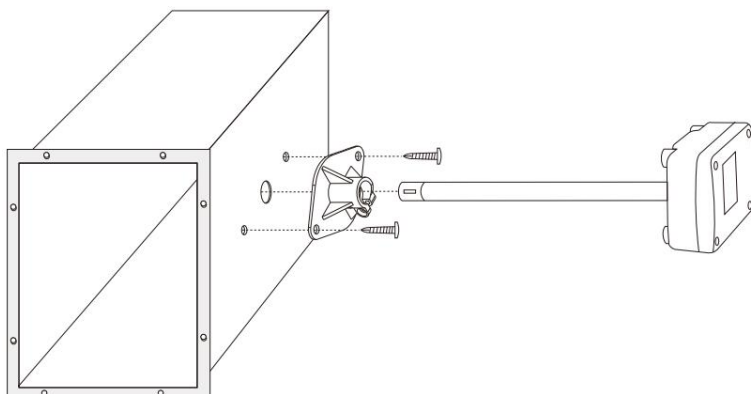
7. Communication Protocol（MODBUS）

Transmission mode: MODBUS-RTU,**Baud rate:** 9600bps,**Data bits:**8,**Stop bit:**1,**Check bit:**no

Slave address:the factory default is 01H (set according to the need,00H to FFH)

7.1 The 03H Function Code Example: Read The Wind Speed

Host Scan Order(slave address:0x01)
01 <u>03 00 00 00 01</u> 840A

Slave Response
01 <u>03 02</u> 041A CB 4F

Wind Speed:(041A)H/100=(1050)D/100=10.5m/s
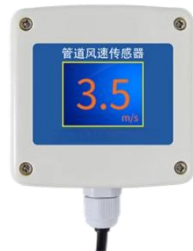
Note:
1. All underlined is fixed bit;

2. The last two bytes is CRC check command.

Note: This product has been tested and complies with European CE requirements for EMC directive.

LED display   **LCD display**

8. Troubleshooting

If some error occurs, such as no output or unreliable. Please disconnect the sensor first, then check if the sensor installation and connection is correct with the instruction manual.

If still not successful, please contact our company.

9. Support contact

Complies with applicable CE directives.

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